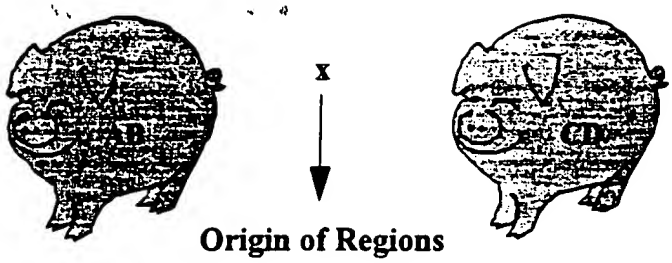
Fig. 1



Origin of Regions

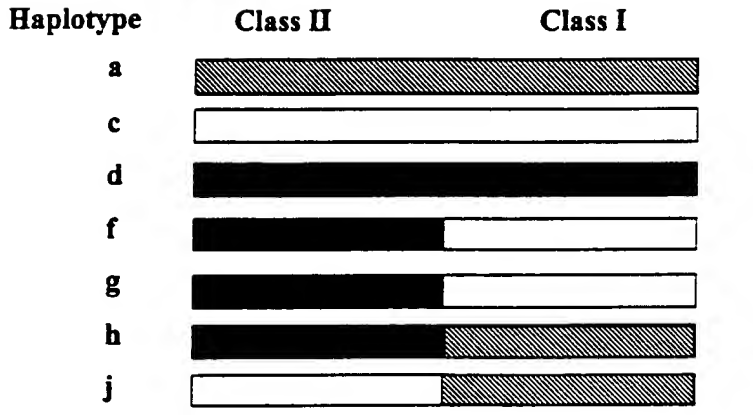


Fig. 2

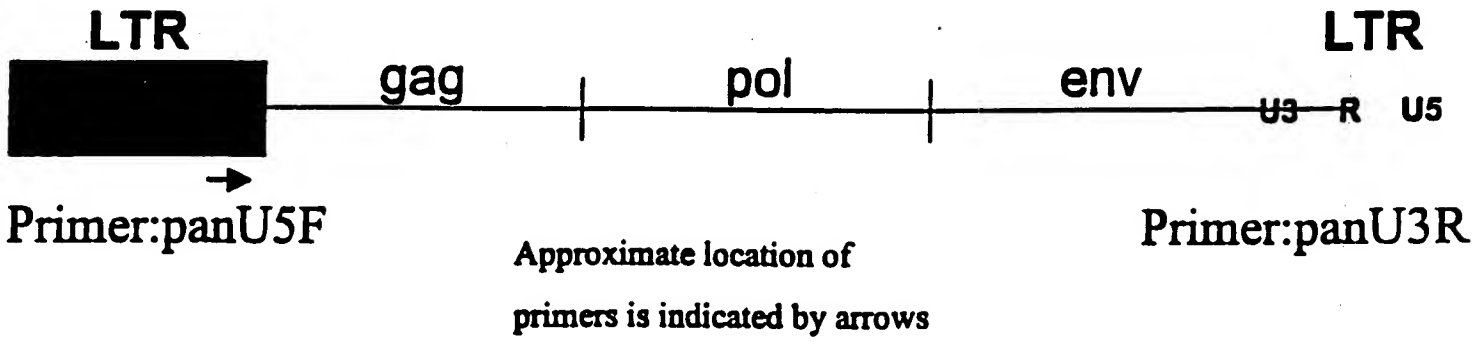


FIGURE 3(a) Sequence of clone 12002-1

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCTC 350
AGGACCCCCA AATAATGAAG AATATTGCGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC 600
```

FIGURE 3(b) Sequence of clone 12002-2

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC 600
```

FIGURE 3(c) Sequence of clone 12002-3

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT
```

FIGURE 3(d) Sequence of clone 12002-4

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC 600
```

FIGURE 3(e) Sequence of clone 12002-5

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGA
```

FIGURE 3(f) Sequence of clone 12002-6

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGA
```

FIGURE 3(g) Sequence of clone 12002-7

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC 600
```

FIGURE 4 Comparison of sequences of clones 12002-1 though 12002-7

```
12002-1.DNA     1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
12002-2.DNA     1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
12002-3.DNA     1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
12002-4.DNA     1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
12002-5.DNA     1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
12002-6.DNA     1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
12002-7.DNA     1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50

12002-1.DNA    51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
12002-2.DNA    51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
12002-3.DNA    51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
12002-4.DNA    51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
12002-5.DNA    51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
12002-6.DNA    51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
12002-7.DNA    51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100

12002-1.DNA   101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG   150
12002-2.DNA   101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG   150
12002-3.DNA   101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG   150
12002-4.DNA   101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG   150
12002-5.DNA   101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG   150
12002-6.DNA   101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG   150
12002-7.DNA   101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GAACAGTCCG   150

12002-1.DNA   151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
12002-2.DNA   151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
12002-3.DNA   151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
12002-4.DNA   151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
12002-5.DNA   151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
12002-6.DNA   151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
12002-7.DNA   151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200

12002-1.DNA   201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
12002-2.DNA   201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
12002-3.DNA   201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
12002-4.DNA   201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
12002-5.DNA   201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
12002-6.DNA   201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
12002-7.DNA   201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250

12002-1.DNA   251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
12002-2.DNA   251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
12002-3.DNA   251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
12002-4.DNA   251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
12002-5.DNA   251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
12002-6.DNA   251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
12002-7.DNA   251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300

12002-1.DNA   301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCTC   350
12002-2.DNA   301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
12002-3.DNA   301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
12002-4.DNA   301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
12002-5.DNA   301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
12002-6.DNA   301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
12002-7.DNA   301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350

12002-1.DNA   351 AGGACCCCCA AATAATGAAG AATATTGCGG AAATCCTCAG GATTTCTTTT   400
12002-2.DNA   351 AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT   400
12002-3.DNA   351 AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT   400
12002-4.DNA   351 AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT   400
12002-5.DNA   351 AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT   400
12002-6.DNA   351 AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT   400
12002-7.DNA   351 AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT   400
```

Figure 4 (cont'd)

```
12002-1.DNA    401 GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA    450
12002-2.DNA    401 GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA    450
12002-3.DNA    401 GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA    450
12002-4.DNA    401 GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA    450
12002-5.DNA    401 GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA    450
12002-6.DNA    401 GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA    450
12002-7.DNA    401 GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA    450

12002-1.DNA    451 GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG    500
12002-2.DNA    451 GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG    500
12002-3.DNA    451 GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG    500
12002-4.DNA    451 GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG    500
12002-5.DNA    451 GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG    500
12002-6.DNA    451 GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG    500
12002-7.DNA    451 GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG    500

12002-1.DNA    501 TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC    550
12002-2.DNA    501 TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC    550
12002-3.DNA    501 TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT ----------    550
12002-4.DNA    501 TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC    550
12002-5.DNA    501 TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC    550
12002-6.DNA    501 TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC    550
12002-7.DNA    501 TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC    550

12002-1.DNA    551 GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC    600
12002-2.DNA    551 GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC    600
12002-3.DNA    551 ---------- ---------- ---------- ---------- ----------    600
12002-4.DNA    551 GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC    600
12002-5.DNA    551 GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGA-    600
12002-6.DNA    551 GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGA-    600
12002-7.DNA    551 GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGAC    600
```

FIGURE 5(a) Sequence from 11619-1

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGA
```

FIGURE 5(b) Sequence from 11619-2

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG CCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGA
```

FIGURE 5(c) Sequence from 11619-3

```
ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC 50
GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA 100
CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG 150
AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC 200
AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT 250
GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC 300
CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC 350
AGGACCCCCA AATAATGAAG AATATTGTGG AAATCCTCAG GATTTCTTTT 400
GCAAGCAATG GAGCTGCGTA ACTTCTAATG ATGGGAATTG GAAATGGCCA 450
GTCTCTCAGC AAGACAGAGT AAGTTACTCT TTTGTTAACA ATCCTACCAG 500
TTATAATCAA TTTAATTATG GCCATGGGAG ATGGAAAGAT TGGCAACAGC 550
GGGTACAAAA AGATGTACGA AATAAGCAAA TAAGCTGTCA TTCGTTAGA
```

FIGURE 5(d) Sequence from 11619-4

```
GACAGCCCGA ACTCCCATAA ACCCTCATCT CTCACCTGGT TACTTACTGA 50
CTCCGGTACA GGTATTAATA TTAACAGCAC TCAAGGGGAG GCTCCCTTGG 100
GGACCTGGTG GCCTGAATTA TATGTCTGCC TTCGATCAGT AATCCCTGGT 150
CTCAATGACC AGGCCACACC CCCCGATGTA CTCCGTGCTT ACGGGTTTTA 200
CGTTTGCCCA GGACCCCCAA ATAATGAAGA ATATTGTGGA AATCCTCAGG 250
ATTTCTTTTG CAAGCAATGG AGCTGCGTAA CTTCTAATGA TGGGAATTGG 300
AAATGGCCAG TCTCTCAGCA AGACAGAGTA AGTTACTCTT TTGTTAACAA 350
TCCTACCTAT AATAATCAAT TTAATTATGG CCATGGGAGA TGGAAAGATT 400
GGCAACAGCG GGTACAAAAA GATGTACGAA ATAAGCAAAT AAGCTGTCAT 450
TCGTTAGA
```

FIGURE 5(e) Sequence from 11619-5

```
TTAATGGTAA ACGCCTTGTG GACAGCCCGA ACTCCCATAA ACCCTTATCT 50
CTCACCTGGT TACTTACTGA CTCCGGTACA GGTATTAATA TTAACAGCAC 100
TCAAGGGGAG GCTCCCTTGG GGACCTGGTG GCCTGAATTA TATGTCTGCC 150
TTCGATCAGT AATCCCTGGT CTCAATGACC AGGCCACACC CCCCGATGTA 200
CTCCGTGCTT ACGGGTTTTA CGTTTGCCCA GGACCCCCAA ATAATGAAGA 250
ATATTGTGGA AATCCTCAGG ATTTCTTTTG CAGGCAATGG AGCTGCGTAA 300
CTTCTAATGA TGGAAATTGG AAATGGCCAG TCTCTCAGCA AGACAGAGTA 350
AGTTACTCTT TTGTTAACAA TCCTACCAGT TATAATCAAT TTAATTATGG 400
CCATGGGAGA TGGAAAGATT GGCAACAGCG GGTACAAAAA GATGTACGAA 450
ATAAGCAAAT AAGCTGTCAT TCGTTAGA
```

FIGURE 5(f) Sequence from 11619-6

```
TTAATGGTAA ACGCCTTGTG GACAGCCCGA ACTCCCATAA ACCCTTATCT 50
CTCACCTGGT TACTTACTGA CTCCGGTACA GGTATTAATA TTAACAGCAC 100
TCAAGGGGAG GCTCCCTTGG GGACCTGGTG GCCTGAATTA TATGTCTGCC 150
TTCGATCAGT AATCCCTGGT CTCAATGACC AGGCCACACC CCCCGATGTA 200
CTCCGTGCTT ACGGGTTTTA CGTTTGCCCA GGACCCCCAA ATAATGAAGA 250
ATATTGTGGA AATCCTCAGG ATTTCTTTTG CAAGCAATGG AGCTGCGTAA 300
CTTCTAATGA TGGGAATTGG AAATGGCCAG TCTCTCAGCA AGACAGAGTA 350
AGTTACTCTT TTGTTAACAA TCCTACCAGT TATAATCAAT TTAATTATGG 400
CCATGGGAGA TGGAAAGATT GGCAACAGCG GGTACAAAAA GATGTACGAA 450
ATAAGCAAAT AAGCTGTCAT TCGTTAGA
```

FIGURE 5(g) Sequence from 11619-7

```
GACAGCCCGA ACTCCCATAA ACCCTTATCT CTCACCTGGT TACTTACTGA 50
CTCCGGTACA GGTATTAATA TTAACAGCAC TCAAGGGGAG GCTCCCTTGG 100
GGACCTGGTG GCCTGAATTA TATGTCTGCC TTCGATCAGT AATCCCTGGT 150
CTCAATGACC AGGCCACACC CCCCGATGTA CTCCGTGCTT ACGGGTTTTA 200
CGTTTGCCCA GGACCCCCAA ATAATGAAGA ATATTGTGGA AATCCTCAGG 250
ATTTCTTTTG CAAGCAATGG AGCTGCGTAA CTTCTAATGA TGGGAATTGG 300
AAATGGCCAG TCTCTCAGCA AGACAGAGTA AGTTACTCTT TTGTTAACAA 350
TCCTACCAGT TATAATCAAT TTAATTATGG CCATGGGAGA TGGAAAGATT 400
GGCAACAGCG GGTACAAAAA GATGTACGAA ATAAGCAAAT AAGCTGTCAT 450
TCGTTAGA
```

FIGURE 5(h) Sequence from 11619-8

```
TTAATGGTAA ACGCCTTGTG GACAGCCCGA ACTCCCATAA ACCCTTATCT 50
CTCACCTGGT TACTTACTGA CTCCGGTACA GGTATTAATA TTAACAGCAC 100
TCAAGAGGAG GCTCCCTTGG GGACCTGGTG GCCTGAATTA TATGTCTGCC 150
TTCGATCAGT AATCCCTGGT CTCAATGACC AGGCCACACC CCCCGATGTA 200
CTCCGTGCTT ACGGGTTTTA CGTTTGCCCA GGACCCCCAA ATAATGAAGA 250
ATATTGTGGA AATCCTCAGG ATTTCTTTTG CAAGCAATGG AGCTGCGTAA 300
CTTCTAATGA TGGGAATTGG AAATGGCCAG TCTCTCAGCA AGACAGAGTA 350
AGTTACTCTT TTGTTAACAA TCCTACCAGT TATAATCAAT TTAATTATGG 400
CCATGGGAGA TGGAAAGATT GGCAACAGCG GGTACAAAAA GATGTACGAA 450
ATAAGCAAAT AAGCTGTCAT TCGTTAGA
```

FIGURE 5(i) Sequence from 11619-9

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TTAATGGTAT GCGCCTTGTG GACTGCCCGA ACTCCCATAA ACCCTTATCT 50
CTCACCTGGT TACTTACTGA CTCCGGTACA GGTATTAATA TTAACATCAC 100
TCAAGGGGAG GCTCCCTTGG GGACCTGGTG GCCTGAATTA TATGTCTGCC 150
TTCGATCAGT AATCCCTGGT CTCAATGACC AGGCCACACC CCCCGATGTA 200
CTCCGTGCTT ACGGGTTTTA CGTTTGCCCA GGACCCCCAA ATAATGAAGA 250
ATATTGTGGA AATCCTCAGG ATTTCTTTTG CAAGCAATGG AGCTGCGTAA 300
CTTCTAATGA TGGGAATTGG AAATGGCCAG TCTCTCAGCA AGACAGAGTA 350
AGTTACTCTT TTGTTAACAA TCCTACCAGT TATAATCAAT TTAATTATGG 400
CCATGGGAGA TGGAAAGATT GGCAACAGCG GGTACAAAAA GATGTACGAA 450
ATAAGCAAAT AAGCTGTCAT TCGTTAGA
```

FIGURE 6 Comparison of the sequences derived from pig 11619

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11619-1.DNA    1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
11619-2.DNA    1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
11619-3.DNA    1 ATGCATCCCA CGTTAAGCCG GCGCCACCTC CCGATTCGGG GTGGAAAGCC    50
11619-4.DNA    1 ---------- ---------- ---------- ---------- ----------    50
11619-5.DNA    1 ---------- ---------- ---------- ---------- ----------    50
11619-6.DNA    1 ---------- ---------- ---------- ---------- ----------    50
11619-7.DNA    1 ---------- ---------- ---------- ---------- ----------    50
11619-8.DNA    1 ---------- ---------- ---------- ---------- ----------    50
11619-9.DNA    1 ---------- ---------- ---------- ---------- ----------    50

11619-1.DNA   51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
11619-2.DNA   51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
11619-3.DNA   51 GAAAAGACTG AAAATCCCCT TAAGCTTCGC CTCCATCGCG TGGTTCCTTA   100
11619-4.DNA   51 ---------- ---------- ---------- ---------- ----------   100
11619-5.DNA   51 ---------- ---------- ---------- ---------- ----------   100
11619-6.DNA   51 ---------- ---------- ---------- ---------- ----------   100
11619-7.DNA   51 ---------- ---------- ---------- ---------- ----------   100
11619-8.DNA   51 ---------- ---------- ---------- ---------- ----------   100
11619-9.DNA   51 ---------- ---------- ---------- ---------- ----------   100

11619-1.DNA  101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG   150
11619-2.DNA  101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG   150
11619-3.DNA  101 CTCTGTCAAT AACTCCTCAA GTTAATGGTA AACGCCTTGT GGACAGCCCG   150
11619-4.DNA  101 ---------- ---------- ---------- ---------- -GACAGCCCG   150
11619-5.DNA  101 ---------- ---------- -TTAATGGTA AACGCCTTGT GGACAGCCCG   150
11619-6.DNA  101 ---------- ---------- -TTAATGGTA AACGCCTTGT GGACAGCCCG   150
11619-7.DNA  101 ---------- ---------- ---------- ---------- -GACAGCCCG   150
11619-8.DNA  101 ---------- ---------- -TTAATGGTA AACGCCTTGT GGACAGCCCG   150
11619-9.DNA  101 ---------- ---------- -TTAATGGTA TGCGCCTTGT GGACTGCCCG   150

11619-1.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-2.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-3.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-4.DNA  151 AACTCCCATA AACCCTCATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-5.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-6.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-7.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-8.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200
11619-9.DNA  151 AACTCCCATA AACCCTTATC TCTCACCTGG TTACTTACTG ACTCCGGTAC   200

11619-1.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
11619-2.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
11619-3.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
11619-4.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
11619-5.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
11619-6.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
11619-7.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250
11619-8.DNA  201 AGGTATTAAT ATTAACAGCA CTCAAGAGGA GGCTCCCTTG GGGACCTGGT   250
11619-9.DNA  201 AGGTATTAAT ATTAACATCA CTCAAGGGGA GGCTCCCTTG GGGACCTGGT   250

11619-1.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
11619-2.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG CCTCAATGAC   300
11619-3.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
11619-4.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
11619-5.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
11619-6.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
11619-7.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
11619-8.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300
11619-9.DNA  251 GGCCTGAATT ATATGTCTGC CTTCGATCAG TAATCCCTGG TCTCAATGAC   300

11619-1.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-2.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-3.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-4.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-5.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-6.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-7.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-8.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
11619-9.DNA  301 CAGGCCACAC CCCCCGATGT ACTCCGTGCT TACGGGTTTT ACGTTTGCCC   350
```

Figure 6 (cont'd)

11619-1.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-2.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-3.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-4.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-5.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-6.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-7.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-8.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-9.DNA	351	AGGACCCCCA	AATAATGAAG	AATATTGTGG	AAATCCTCAG	GATTTCTTTT	400
11619-1.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-2.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-3.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-4.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-5.DNA	401	GCAGGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGAAATTG	GAAATGGCCA	450
11619-6.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-7.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-8.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-9.DNA	401	GCAAGCAATG	GAGCTGCGTA	ACTTCTAATG	ATGGGAATTG	GAAATGGCCA	450
11619-1.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-2.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-3.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-4.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCTA	500
11619-5.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-6.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-7.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-8.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-9.DNA	451	GTCTCTCAGC	AAGACAGAGT	AAGTTACTCT	TTTGTTAACA	ATCCTACCAG	500
11619-1.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-2.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-3.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-4.DNA	501	TAATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-5.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-6.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-7.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-8.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-9.DNA	501	TTATAATCAA	TTTAATTATG	GCCATGGGAG	ATGGAAAGAT	TGGCAACAGC	550
11619-1.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-2.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-3.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-4.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-5.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-6.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-7 DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-8.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600
11619-9.DNA	551	GGGTACAAAA	AGATGTACGA	AATAAGCAAA	TAAGCTGTCA	TTCGTTAGA.	600